Validity of automatic function imaging to measure peak systolic strain for detection of myocardial viability as compared with Thalium MPI

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Background: Thallium201 myocardial perfusion scintigraphy (MPI) is the most common modality used myocardial viability (MV), automatic function imaging (AFI) to measure peak systolic strain is relatively recent Echocardiographic modality with questionable validity for detection of viability.

Aim: To evaluated the validity of peak systolic strain for detection of MV as compared with Thallium MPI. Methods: 50 patients with myocardial infarction will be included in our prospective study. Thallium MPI to be used as reference for MV (Rest-4 h and if necessary 24 h protocol). The automatically generated Bulls eye image will be used for quantitative segmental analysis and to be compared with Echocardiographic AFI for peak systolic strain with the 17 segments model of analysis (GE system). The results will be compared as segment by segment as well as regional (as per coronary territory).

Results: We present the result of first 10 case series (including analysis of 170 segments). There is over all concordance between the automated count at image of peak systolic strain and the percent of radiotracer uptake at Thallium 201 bulls eye images in both infracted and non infracted segments. The cut value of AFI for viability requires larger sample analysis. There is observed false negative results at segments with very low peak systolic strain as low as-2 that showed mild perfusion defect at rest and complete reuptake at redistribution image.

Conclusion: Peak systolic strain is useful modality for assessment of viability, its sensitivity might be limited with false negative results compared with Thallium 201 scintigraphy.

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Mitral clip: A novel percutaneous approach to mitral valve repair. Review of prince sultan cardiac center experience

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Mitral clip procedure is an evolving and promising therapeutic intervention which is helpful for patients with symptomatic significant mitral regurgitation (MR) and with very high surgical risk in addition to its role as palliative measure until definitive treatment. Transesophageal echocardiography (TEE) plays a key role in assessing suitability and it is an essential modality during the different stages of the procedure. Our series includes thirteen (13) patients of significant symptomatic MR. Eight (8) were males (62%), five (5) were females (38%). Age ranges from 45 to 95. Average is 55. The patients were representing 4 different aetiologies of MR (76.9% were functional MR).

Ischemic cardiomyopathy represented the majority of our patients (53%) with EF ranging from 20% to 30% and MR span from moderately severe to severe. There were three (3) cases of non-ischemic cardiomyopathy (23%) with EF ranging from 25% to 30% and MR of moderately severe to severe. Degenerative MR was represented by two (2) cases 15% of moderately severe MR and EF of 45–50%. There was one (1) case (7%) of flail severe MR and EF of 55%. One (1) was aborted due to complication during trans septal puncture. The clip was implanted successfully in 100% of the cases. All patients were followed up with symptoms and clinical status scrutiny as well as echo predischarge, 1 month and 3 months post procedure. Mitral regurgitation improved 2–3 grades in 6 patients (46%) with significant improvement in symptomatology. Three (3) patients exhibited 1 grade improvement in MR (23%) with limited if any symptomatic improvement and two (2) patients (15%) remains with severe MR.

It appears to be a promising technique to improve MR grade and symptomatology in significant number of patients. However, the small number of patients and the short period of follow-up stand against strict conclusions about the clinical value of the procedure.

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Value of transthoracic Doppler echocardiography in the assessment of the left anterior descending artery flow in patients follow acute myocardial infarction

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Background: The primary goal in the management of acute myocardial infarction is to institute reperfusion as early as possible. A major problem facing cardiologists lies in the limitation of accurate identification of patients in whom antegrade coronary flow has not been restored, whether spontaneously or following thrombolytic therapy. Clinical markers of reperfusion, such as relief of ischemic-type of chest discomfort, resolution of the ST-segment elevation, and the occurrence of reperfusion arrhythmias have limited predictive value in identifying failure of thrombolysis.

Objectives: Assessment of reperfusion by direct visualization of the distal left anterior descending artery (LAD) flow using transthoracic Doppler echocardiography (TTDE) with 2.5 MHz probe, making assessment of reperfusion bedside, simple and reliable tool.

Methods: We prospectively studied 74 consecutive patients who underwent coronary angiography following an acute ST-segment elevation myocardial infarction. We performed for all of them TTDE with assessment of the LAD distal flow by color Doppler.